

Control Point "UCML"

Control Point "UCML" is located on the rooftop of the Marine Sciences building of the University of California at Santa Barbara. The control point is the top of the screw installed in the board attached to the back wall of the roof (see photographs below).

For the purposes of the SWATH bathymetry survey conducted between the dates of 27 June and 21 July, 2010, the RTK GPS base station was programmed using the ITRF00 (~= WGS84) coordinates derived from the OPUS solutions obtained during previous surveys. A running average of the NAD83 (Epoch 2002.0000) coordinates of daily OPUS solutions dating back to 2007 were converted to ITRF00 coordinates (~Epoch 2010.5000) using the software "Blue Marble Desktop (Geographic Calculator)" by Blue Marble Geographics.

A slightly edited, recorded interactive session follows:

Conversion Date: 6/3/2010 2:51:14 PM

Source Coordinate System

Coordinate System: NAD83(NSRS2007)

Datum: NAD83 (National Spatial Reference System 2007)

Date: 1/1/2002 (Epoch: 2002.00273972603)

Ellipsoid: GRS 1980

Semi-major axis(meters): 6378137.00000000

Semi-minor axis(meters): 6356752.31414036

Eccentricity: 0.08181919104281582

Eccentricity Squared: 0.0066943800229007921

Inverse Flattening: 298.257222101

Inverse Flattening Definitive: True

Vertical Reference: Ellipsoidal Height

Target Coordinate System

Coordinate System: ITRF 00 Coordinate System

Datum: ITRF 2000

Date: 7/1/2010 (Epoch: 2010.49863013699)

Ellipsoid: GRS 1980

Semi-major axis(meters): 6378137.00000000

Semi-minor axis(meters): 6356752.31414036

Eccentricity: 0.08181919104281582

Eccentricity Squared: 0.0066943800229007921

Inverse Flattening: 298.257222101

Inverse Flattening Definitive: True

Vertical Reference: Ellipsoidal Height

Source Point Name: "UCML"

Geodetic latitude (Degree): N 34 24 28.93498

Geodetic longitude (Degree): W 119 50 35.09376

Ellipsoidal height (Meter): -13.869

Orthometric Height Scale: 01.000002182103378

Target Point Name: "UCML"

Geodetic latitude (Degree): N 34 24 28.95515

Geodetic longitude (Degree): W 119 50 35.15517

Height (Meter): -14.533

Orthometric Height Scale: 01.000002286560512



Figure 1 Control Point "UCML" on top of the Marine Sciences building at UC Santa Barbara.



Figure 2 Control Point “UCML” is the top of the screw, attached to board, which is attached to the wall.

GPS Configurator Port 2 On ...

Serial outputs | Rover | Antenna | Config | Radio | Ref
Details | General | Tracking | Position | Log data | Base

Outputs

☒ CMR Port 3 Offset (ms) 0
Type CMR Plus ID 20

☐ RTCM Port 1
Version Version 2 ID 1023

Station information

Name: UCML
Latitude: 34°24'28.95515"N Height: -14.533m
Longitude: 119°50'35.15517"W
Use the Ref tab to change station information

Antenna information

Type: Zephyr Geodetic 2
Method: Antenna phase center
Serial: 30492556 Height: 2.085m
Use the Antenna tab to change antenna information

OK Cancel Apply Help

Figure 3 RTK GPS base station "UCML" programming values.